

# Tideland Topics

REAL PEOPLE. REAL POWER.

A NEWSLETTER FOR THE MEMBER-OWNERS OF TIDELAND ELECTRIC MEMBERSHIP CORPORATION

## ENERGY 2.0:

### Co-op hosts microgrid project at Ocracoke

Thanks to North Carolina Electric Membership Corporation (NCEMC), Tideland EMC employees are getting a first-hand opportunity to work with a microgrid. NCEMC, which owns the Ocracoke generating station, recently installed rooftop solar and Tesla batteries as part of its first microgrid project. On the consumer side of the microgrid equation, Tideland is actively recruiting island residents to participate in a smart thermostat program to complement both the project's energy storage and renewable energy assets.

So what is a microgrid? First, it's a good idea to understand the utility grid as it currently exists.

Electricity used by Tideland members is generated at massive plants hundreds of miles away. For energy to reach the end consumer, thousands of miles of transmission and distribution power lines are constructed and maintained along with



*A 15 KW rooftop solar array was installed at the Ocracoke generating plant.*



*NCEMC's microgrid project manager Bob Beadle gives island reporters a look inside the Tesla installation.*

*...continues on page 20*



## Message to our Member-Owners: 365 days of savings

By Paul Spruill  
General Manager & CEO

### Right-of-Way Maintenance Update

In January, Lucas Tree Experts will complete tree trimming in Hyde County in the areas of Fairfield, Piney Woods Rd, North Lake Rd and all adjoining side roads.

Mowing crews will be working along Hwy 264 between Belhaven and Scraton and also along New Lake Rd and all adjoining side roads.

Please lend your full support to our tree trimming efforts. Trees are the number one cause of outages.

As the January newsletter went to press in early December, Tideland was on track to issue \$2.3 million in wholesale power cost adjustment (WPCA) credits during 2016.

Through the end of November 2016, WPCA credits had already reached the \$2 million mark. The average monthly WPCA credit for 2016 was 0.689¢ per kilowatt hour (kWh). We ended the year on a particularly high note with the December credit at 1.07¢ per kWh. That brought the billed rate for residential members down to 9.51¢ per kWh, a 10% reduction from our published rate of 10.58¢.

Most members also benefitted from the capital credit refund, further reducing December bills.

In 2015, WPCA credits totaled \$1.3 million, which was significant in and of itself. At the beginning of 2016, even our best forecasts didn't project WPCA credits exceeding \$2 million by year end. The power cost savings were derived from two components: fuel cost savings associated with expanded natural gas generation and lower demand

charges. In fact, Tideland's demand charges were approximately one-third lower in 2016 than they were in 2015 thanks to milder weather conditions.

In 2017, we believe the WPCA credit will level off and be more in line with 2015 savings.

As always we want to remind you that your best opportunity to reduce energy costs continues to be energy efficiency. January 1 is a great time to establish New Year's energy saving resolutions.

First on your list should be enrolling in high energy use alerts to prevent runaway electric bills. If you haven't done so already, I highly encourage you to log into the online member portal and familiarize yourself with your energy consumption patterns which can be found by clicking on the "Usage History" option.

Don't hesitate to call the co-op before embarking on energy efficiency projects. We're here to help you and guide you in making the wisest use of your energy improvement dollars.



### Tideland College Scholarships

**Eligible:** Graduating high school seniors served by Tideland EMC. Eight \$1,000 non-renewable scholarship for students attending college or community college.

**Deadline to Apply:** March 10, 2017



### Youth Tour to Washington, DC

**Dates:** June 13-19, 2017

**Eligible:** Rising high school juniors and seniors served by Tideland EMC. All-expense-paid trip to learn about co-ops as well as our nation's history and governance.

**Deadline to Apply:** March 17, 2017



### UNC & NC State Summer Basketball Camps

**Camp Dates:** to be determined  
**Eligible:** Rising sixth, seventh, eighth grades served by Tideland EMC. All-expense-paid trip. Girls attend NC State Camp. Boys attend UNC Roy Williams Camp.

**Deadline to Apply:** March 31, 2017

For details & application forms visit [www.tidelandemc.com](http://www.tidelandemc.com)

## THE POWER OF EDUCATION

# Tideland funds innovative classroom projects



Tideland EMC recently awarded more than \$14,000 in Bright Ideas grant funding during a banquet held at Deadwood in Bear Grass.

In Hyde County, Mattamuskeet High School teacher Ronald Crider received a \$677 grant to install a weather station.

In Beaufort County, grants were awarded to teachers Eric Godwin, Robin Potter, Lisa Staats, Brett O'Brien, and Allen Bateman.

Godwin's \$1,991 grant will fund a raised bed garden at Washington High School.

Potter's \$648 grant will be used to purchase innovative desks and seating to improve student health and attentiveness in her Chocowinity Middle School classroom.

Staats hopes to positively impact students' sedentary habits with her \$576 grant to help Chocowinity Middle School participants prepare for a 5K race.

O'Brien, a special needs teacher at John C. Tayloe Elementary, will use her \$117 grant for caterpillar, tadpole and seed displays.

At P.S. Jones Middle School, Allen Bateman's grant of \$1,265 will help students establish their own green business enterprise through the growing, harvesting and sale of fresh produce at a local market.

In Craven County, teachers Kelly Forbis and Caroline Tart received awards. Forbis will use her \$1,892 grant to create a mock grocery store so her special needs students at West

Craven Middle School can acquire the skills necessary to work in a similar retail environment. Tart's \$1,727 grant will be used to purchase goats and hogs for West Craven High School's agriculture program.

In Pamlico County, grant funding was awarded to teachers Maureen Prendergast, Lois Moye, Kara Walton, and Raymond Marks.

Prendergast, who teaches at Pamlico County Middle School, will purchase a variety of tools to bring virtual reality, robotics, engineering, coding and puzzles into the classroom. Her grant award totaled \$1,112.

Moye's \$951 grant will purchase copies of Archimedes "The Sand-Reckoner" for each student and materials necessary to conduct a

catapult design and build project.

Walton, who also teaches at the high school, will purchase a spectrophotometer with her \$1,814 grant so her science students can identify compounds and learn proper lab techniques.

Marks, a marine science teacher at Arapahoe Charter School, will lead his students in the construction of an underwater remotely operated vehicle. He received a grant in the amount of \$1,606.

Teachers interested in applying for the next round of Bright Ideas grants may do so online in the spring of 2017 by visiting [www.ncbrightideas.com](http://www.ncbrightideas.com).



**This year's Bright Ideas award winners were honored at a banquet held at Deadwood in Bear Grass. They joined winners from four other electric co-ops.**

1.

**Enroll in high use energy alerts**

Catch potential problems before they catch up with you. Available from the co-op as text and/or email alerts.

2.

**Check with the co-op about available rebates before replacing HVAC or water heating equipment**

3.

**Commit to cold water clothes washing**

You'll cut laundry costs up to 90%.

4.

**Keep your winter thermostat at or below 68°**

Every degree higher increases heating costs 3-5%.

5.

**Increase your attic insulation to R-38, making sure not to block soffit vents**

# ENERGY 2.0

continued from page 17

substations and transformers that step the voltage up to increase its ability to travel long distances and others that decrease the voltage for distribution to your home or business. The longer the distance the more susceptible the power is to potential disruptions such as weather events. To improve reliability, utilities invest in redundant pathways to guard against system interruptions. And that's how power companies have largely operated since inception.

During the journey from generating plant to residential meter, 5 to 7 percent of the electricity is lost. Worldwide transmission losses total around 1.4 trillion kilowatt-hours annually. And transmission losses increase with higher outdoor temperatures.

So what if generating facilities could be located closer to the end user? What if batteries could be charged during times of low energy use and discharged during times of peak demand? What if we

down confines of traditional utility structures. While microgrids can be constructed independently of the transmission grid, doing so in all but the most remote areas of the world doesn't make sense given the current reliability and affordability of centralized generating facilities. But a microgrid could help iron out periods of inefficiency and high costs.



*The installation consists of multiple Tesla batteries*

These are the possibilities NCEMC will explore while analyzing the cost, durability, reliability and efficiency of each microgrid component to better understand how they operate independently and collectively to best achieve desired results.

Islanders may wonder if this project will enhance service during transmission outages. The microgrid components could help overcome initial start up problems by supplementing the 3-megawatt generator with energy stored in the Tesla batteries. Additionally,

we could reduce emergency power requirements by adjusting the smart thermostats until loads even out or transmission is restored. So if you have a home or business on the island we encourage you to call us about the smart thermostat project. We are at about 60 percent of our installation goal.

In the coming months, Tideland will also offer Ocracoke residents the opportunity to enroll in a new water heater load control program to expand the microgrid capabilities.

We look forward to working with NCEMC to learn from this project and better position ourselves to deliver next generation energy solutions.



combined distributed generation and energy storage with the ability to reshape consumer loads like water heating and air conditioning during electricity traffic jams?

That's part of the rationale for this pilot project, allowing us to explore options beyond the top-

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[www.tidelandemc.com](http://www.tidelandemc.com)

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